Solutions for Belt Slip
In Supercharger Drive Systems

You can easily confirm that you do or do not have belt slip in your supercharger drive system with one of these three methods:

1) on the dyno or car-mounted boost gauge, the boost will plateau. Centrifugal superchargers make more air the faster you spin them almost without limit (almost!). So if you see the boost stop and hold steady — the tach shows the engine is increasing revs but the boost stays still - belt slip is likely.
2) a dark rubber residue on the front of the supercharger near the pulley - that's rubber thrown by belt slippage.
3) apply belt dressing to the drive belt. Its cheap and available at most auto parts stores. If you get more boost on your next pull—then you did have belt slip and you have now temporarily reduced it. Note that it isn't "fixed". Belt dressing is not a cure.

Belt slip and drive pulley sizes: Remember that every time you change to a smaller pulley, you loose tractive force on the belt and the ability to pull a load. To make matters worse - you just increased the load - trying to move more air increases the load on the belt, and now you have even less tractive force to do it with because the pulley is smaller.

Solutions for belt slip:

1) go from a 6-rib to an 8-rib pulley system. If 8-rib, go to 10-rib or a cogged pulley system.

2) if using a sprung belt tensioner, replace with static (solid) belt tensioner.

3) if driving the supercharger from a shared serpentine belt that drives the other auxiliaries, change it so the supercharger has its own belt. The supercharger demands 50 to 100 HP to drive it (depending on model, back-pressure, and rpm) and nothing else in that system (the alternator, the power steering pump, etc) do. So the serpentine system is not designed for that load and you will never get the belt tight enough. If you did, you would overload the alternator bearings into an early failure anyway. It is convenient for kit makers to drive off the serpentine belt, but that only works for light supercharger loads up to about 6-8 psi. Put the supercharger on its own crank pulley with its own tensioner.

4) get more belt wrap. Optimum belt wrap around the supercharger pulley is 190 degrees. Sometimes you can install an idler pulley in the system to create more belt wrap around the supercharger drive pulley. See photo.

5) Increase the sizes of both the drive and driven pulleys in the system. Example: increasing the size of the crankshaft (drive) pulley allows you to run a much larger supercharger (driven pulley) too, get more tractive force, and keep the ratios you want (or even spin the supercharger faster).

Do not expect to hear a slipping 6 or 8-rib belt. They usually don't make any noise. V-Belts will squeal, multi-rib belts wont.

Just some tips - hope it helps.

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